

IN THE CLAIMS:

Please CANCEL claims 1-35 and ADD new claims 36-52 in accordance with the following:

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36. (NEW) A solid-state imaging device comprising:

a plurality of two-dimensionally arranged photo diodes;

a plurality of microlenses which cover the respective photo diodes and which include substantially hemispherical shapes, a transparent resin upper layer which forms a portion of the substantially hemispherical shape and a colored lower layer provided between the transparent resin upper layer and the photo diode, the interface between the transparent resin upper layer and the colored lower layer being flat; and

at least a portion of the colored lower layer forming a portion of the substantially hemispherical shape.

37. (NEW) A solid-state imaging device according to claim 36, wherein at least the portion of the colored lower layer from the interface to halfway through the colored lower layer in the thickness direction forms a portion of the substantially hemispherical shape.

38. (NEW) A solid-state imaging device according to claim 36, wherein a remaining portion of the colored lower layer from the interface to halfway through the colored lower layer in the thickness direction maintains a shape when the colored lower layer is formed.

39. (NEW) A solid-state imaging device according to claim 36, wherein the colored lower layer comprises a colored resin layer containing a dye as a coloring material.

40. (NEW) A solid-state imaging device according to claim 36, wherein a thickness difference between said plurality of colored lower layers is not more than 0.3 μm .

41. (NEW) A solid-state imaging device according to claim 36, wherein a refractive index of the transparent resin upper layer is not more than that of the colored lower layer.

42. (NEW) A solid-state imaging device according to claim 36, further comprising a planarized layer provided between the microlens and the photo diode, and in which at least one of the microlens and the planarized layer has an infrared absorbing function.

43. (NEW) A solid-state imaging device according to claim 42, further comprising an ultraviolet absorbing layer provided between the planarized layer and the colored lower layer.

44. (NEW) A solid-state imaging device according to claim 43, wherein the planarized layer has an ultraviolet absorbing function.

45. (NEW) A solid-state imaging device according to claim 36, wherein the microlens further comprises a lens matrix which is provided on the transparent resin upper layer and forms at least a portion of the substantially hemispherical shape.

46. (NEW) A solid-state imaging device according to claim 36, wherein a value obtained by subtracting a thickness T_1 of the portion of the colored lower layer forming a portion of the substantially hemispherical shape from a thickness T , where T is a thickness of the colored lower layer, is not less than 0.4 μm .

47. (NEW) A solid-state imaging device according to claim 45, wherein a thickness T_1 of a portion of the colored lower layer which forms at least a portion of the substantially hemispherical shape satisfies a condition $0.02T \leq T_1 \leq 0.5T$, where T is a thickness of the colored lower layer.

48. (NEW) A solid-state imaging device according to claim 36, wherein a material for the planarized layer comprises a resin which has a transmittance of not more than 40% at an exposure wavelength and also a transmittance of not less than 90% in a visible range.

49. (NEW) A solid-state imaging device according to claim 36, wherein a refractive index of the transparent resin upper layer is lower than that of the colored lower layer.

50. (NEW) A solid-state imaging device according to claim 36, further comprising a refractive outer resin layer which has a lower refractive index than the colored lower layer and covers a portion of the colored lower layer which forms at least a portion of the substantially hemispherical shape.

51. (NEW) A solid-state imaging device according to claim 50, wherein the transparent resin upper layer comprises a fluorine-based acrylic resin.

52. (NEW) A solid-state imaging device according to claim 36, further comprising non-opening portion layers which cover non-opening areas existing between said plurality of microlenses; and

at least one of the transparent resin upper layer or the thin film is made of a fluorine-based acrylic resin.